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Leaflet No. 319

Control of Lice on Cattle

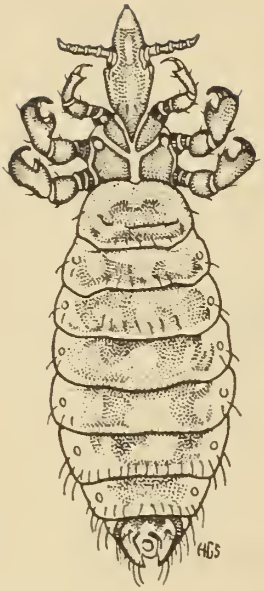
Protects herd health

Improves herd appearance

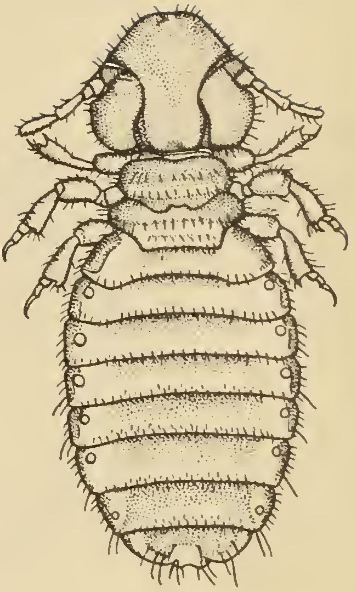
Adds weight to beef cattle

Increases milk production

Agricultural Research Administration
U. S. DEPARTMENT OF AGRICULTURE
December 1951



A bloodsucking louse.



The biting louse.

(Both greatly enlarged)

The bloodsucking lice that attack cattle are Linognathus vituli (L.), Haematopinus eurysternus (Nitz.), Solenopotes capillatus Enderein, and Haematopinus quadripertusus Fahrenh. The biting louse is Bovicola bovis (L.).

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LICE are common pests of cattle. Three species of bloodsucking lice and one kind of biting louse are widely distributed throughout the United States. The blooksucking tail louse has been found recently in the Southern States, particularly in Florida.

When free of lice, beef cattle gain more weight and dairy cows produce more milk.

When to Apply Control Measures

The common lice are most prevalent in the late fall, winter, and early spring. The tail louse is most abundant from late spring to early fall.

Inspect cattle at regular intervals, and treat them when necessary. It is especially important to treat them in the fall, even if only a few lice appear, to prevent the seasonal build-up of infestation.

Some of the insecticides recommended for louse control are also used in the summer for controlling flies. Regular treatments for fly control may not destroy all lice. If you treat the animals thoroughly when making the last fly-control treatment in the fall, it may not be necessary to make special treatments for lice later.

What Insecticides to Use

You can control the common cattle lice with rotenone, pyrethrum, DDT, methoxychlor, TDE, toxaphene, lindane, benzene hexachloride, and chlordane. All these materials are recommended for use as sprays on beef cattle, but rotenone, pyrethrum, methoxychlor, and lindane are the only ones at present recommended for application to dairy cows. Rotenone and DDT also may be used as dips. If you prefer a dust, use methoxychlor, rotenone, or lindane on dairy or beef cattle and DDT on beef cattle. Some of the other insecticides may also be satisfactory as dips or dusts, but we do not yet have sufficient information to make recommendations as to their use.

These insecticides are sold in various kinds of formulations. Most of them are available as wettable powders or emulsifiable concentrates, which must be diluted with water before using. Some dusts may be obtained ready-prepared at the strength recommended for use; others must be diluted with an inert carrier.

Some preparations may not be available in all parts of the country. The amount of insecticide in the concentrates varies with the kind and brand. The label on the container will tell you the strength of the product.

How to Apply Sprays

You can apply all these insecticides as sprays with the same equipment and in the same manner.

For large herds power sprayers are more economical and do the job faster than hand equipment. Many types of power sprayers are on the market, varying mainly in capacity and rate of output. The most practical type and size depend largely on the number of cattle to be treated.

Place the cattle in a well-built chute or small crowd pen. Add the proper amount of insecticide (indicated in the next section) to the water in the spray tank. Start the sprayer and first direct the spray stream back into the tank to insure thorough mixing. Power sprayers are provided with agitators. After the spray material has been well mixed, the agitator keeps it that way. A pressure from 100 to 200 pounds per square inch is most suitable for applying spray to animals. Wet them thoroughly, including the dewlap, crotch, the inside of ears, and the switch of the tail. Such places on the animal often miss proper treatment.

The amount of spray needed for one animal will depend on its size and the length of its hair. Complete coverage may require as much as 4 gallons for each mature animal. In the Southeast good coverage can be obtained with 2 quarts or less on short-haired breeds during the summer months.

For treating a few animals a cylindrical air-pressure or knapsack sprayer is suitable. Such sprayers usually hold 2 to 3 gallons. Apply the spray thoroughly, as described for power sprayers. Owing to the low pressure developed in hand sprayers, you may have some difficulty in getting animals with long, dense hair thoroughly wet, but you can do a satisfactory job if you take care and sufficient time. Since hand sprayers may not have agitators, shake the sprayer occasionally to assure a properly mixed spray.

How to Prepare and Use Sprays

The way to prepare and use sprays containing each insecticide is discussed below. Unless otherwise stated, the recommendations apply only to the common lice. Most of the materials have not been tried on the tail louse.

Rotenone sprays may be applied to either beef or dairy cattle. They should contain 0.006 percent of rotenone. To prepare a spray of this strength, add 1 pound of derris or cube containing 5 percent of rotenone to 100 gallons of water, or about 1/2 ounce to 3 gallons. If the powder contains a different percentage of rotenone, or you use an emulsifiable rotenone extractive, calculate the amount to add on the basis of the 5-percent strength.

Make two applications of rotenone sprays from 14 to 18 days apart.

Pyrethrum sprays may be applied either to beef or dairy cattle. This insecticide is available in mixture with another material called piperonyl butoxide. Emulsifiable concentrates containing 1 percent of pyrethrins and 10 percent of piperonyl butoxide are on the market. The spray should contain 0.025 percent of pyrethrins and 0.25 percent of piperonyl butoxide. To prepare such a spray, add 2 1/2 gallons of the concentrate to 100 gallons of water, or 1/2 pint to 2 1/2 gallons.

A single treatment may give satisfactory control, but animals should be examined closely and a second treatment given after 14 to 18 days when necessary.

DDT is recommended for louse control only on beef cattle. The spray should contain at least 0.5 percent of DDT. If you use a higher percentage, apply proportionately less spray. Wettable powders and emulsifiable concentrates containing DDT are generally available.

To prepare a 0.5-percent spray add 2 gallons of a 25-percent emulsifiable concentrate or 8 pounds of a 50-percent wettable powder to 100 gallons of water. For smaller quantities use 1/2 pint of the emulsifiable concentrate or 1/4 pound of the wettable powder to 3 gallons of water.

One treatment usually will provide satisfactory control. However, apply a second treatment if you find lice 14 to 18 days later.

To control the tail louse a spray containing 1 to 1.5 percent of DDT is recommended. Treat the entire animal, including a thorough wetting of the switch of the tail.

Methoxychlor may be applied to both beef and dairy cattle. It is on the market in the same types of preparations as described for DDT, and the same concentrations are recommended.

TDE is recommended only for beef cattle. It is also available in the same type of preparations as described for DDT, and should be used in the same manner.

Lindane may be used on both dairy and beef cattle. If not properly used, it is more likely to injure the animals, especially young calves, than are the other insecticides. A concentration of 0.03 to 0.05 percent is recommended for animals a year or older, and 0.03 percent for younger animals.

Wettable powders containing 25 percent and emulsifiable concentrates containing 20 percent of lindane are available. To make a 0.03-percent spray, add 1 pound of the wettable powder or 1 1/4 pints of the emulsifiable concentrate to 100 gallons of water. If you use a small sprayer, add 1/2 ounce of the wettable powder or 1 tablespoonful of the emulsifiable concentrate to 3 gallons of water.

One treatment with lindane spray will usually provide satisfactory control. However, if lice are still present on the animal after 14 to 18 days, repeat the treatment.

Benzene hexachloride is the technical chemical from which lindane is made. It is available as wettable powders containing different amounts of the gamma isomer. The strength of the gamma isomer in the spray should be the same as the strength recommended for lindane. Technical benzene hexachloride is not recommended for use on dairy cows.

Toxaphene is recommended for use only on beef cattle. It is commercially available as emulsifiable concentrates and wettable powders. A spray containing 0.5 percent of toxaphene is recommended. Do not exceed this concentration, because it may injure the animals. To make a 0.5-percent spray, add 1 gallon of a 50-percent emulsifiable concentrate or 10 pounds of a 40-percent wettable powder to 100 gallons of water, or 5 ounces of the wettable powder or 1/4 pint of the emulsifiable concentrate to 3 gallons.

One treatment with toxaphene spray will usually control lice satisfactorily. Give a second treatment if lice are present after 14 to 18 days.

Chlordane is recommended for use only on beef cattle. It is recommended as a 0.5-percent spray. Do not exceed this concentration. Like lindane and toxaphene, chlordane in excessive amounts may cause injury. Emulsifiable concentrates containing from 40 to 75 percent of chlordane are on the market. To make a 0.5-percent spray add 1 gallon of a 50-percent emulsifiable concentrate to 100 gallons of water. Read the directions on the label carefully before mixing.

Chlordane is one of the best insecticides for louse control, and one good treatment should be effective for several months. It is not recommended for repeated applications, but occasional treatments as required for louse control will have no harmful effect.

How to Prepare and Use Dips

Rotenone: Add 10 pounds of derris or cube containing 5 percent of rotenone to 1,000 gallons of water. This makes a dip containing 0.006 percent of rotenone, the same as for sprays. Also add 100 pounds of finely ground wettable sulfur. Mix well before dipping the cattle. Two dippings 14 to 18 days apart will be necessary.

DDT: Add 80 pounds of a 50-percent wettable powder to 1,000 gallons of water. This makes a 0.5-percent dip. Dips prepared with wettable powders are preferred to those prepared with emulsions. One dipping will give good control of all common lice. A second dipping 14 to 18 days later may be required to control the tail louse.

How to Use Dusts

Dusts are less effective than sprays or dips, because they do not easily penetrate the long, dense hair on the animals. However, stockmen may prefer to avoid wetting animals in cold weather.

Dusts containing 1 percent of rotenone, 1 percent of lindane, or 10 percent of methoxychlor are recommended for use on either dairy or beef cattle, but 10-percent DDT dust is recommended only for beef cattle.

Apply about 6 ounces of dust to each mature animal, with any available duster. Rub the animals with the hands if necessary to get the dust to sift through the hair. A second treatment after 14 to 18 days is usually necessary.

PRECAUTIONS

Insecticides are poisonous. Handle them with care and avoid unnecessary exposure to them. Wash off any concentrated materials spilled on the skin.

Do not use a spray or dip if an oily or gummy layer forms after mixing.

Do not use toxaphene, chlordane, lindane, or benzene hexachloride in higher concentrations than those recommended.

Do not contaminate feed, food containers, or watering troughs with insecticides.

Do not spray or dip recently weaned calves in bad weather, for the exposure may kill them.

Do not use oil sprays for controlling lice on cattle.

Do not use DDT, TDE, toxaphene, or chlordane on dairy cattle.

When using a power sprayer, be sure to direct the stream back into the tank long enough to mix the insecticide thoroughly before beginning treatment or resuming it after any interruption. Otherwise some of the animals may receive too much concentrated insecticide for safety or too little for adequate louse control. If you use a hand sprayer without an agitator, shake it regularly to keep the spray material mixed.

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Prepared by the Division of Insects Affecting Man and Animals, Bureau of Entomology and Plant Quarantine, and the Zoological Division, Bureau of Animal Industry.

For further details regarding lice on cattle and their control, consult your county agent or your State livestock specialists, or write to the Bureau of Entomology and Plant Quarantine or the Bureau of Animal Industry, Washington 25, D. C.

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